is, or has the potential to be, released to the atmosphere (or the point of entry into a control device, if any). Examples of process vents include, but are not limited to, vents on condensers used for product recovery, bottoms receivers, surge control vessels, reactors, filters, centrifuges, and process tanks. Process vents do not include vents on storage tanks, wastewater emission sources, or pieces of equipment.

Typical batch means a batch process operated within a range of operating conditions that are documented in an operating scenario. Emissions from a typical batch are based on the operating conditions that result in representative emissions. The typical batch defines the uncontrolled emissions for each emission episode defined under the operating scenario.

Uncontrolled fluorinated GHG emissions means a gas stream containing fluorinated GHG which has exited the process (or process condenser or control condenser, where applicable), but which has not yet been introduced into a destruction device to reduce the mass of fluorinated GHG in the stream. If the emissions from the process are not routed to a destruction device, uncontrolled emissions are those fluorinated GHG emissions released to the atmosphere.

Unsafe-to-monitor means that monitoring personnel would be exposed to an immediate danger as a consequence of monitoring the piece of equipment. Examples of unsafe-to-monitor equipment include, but are not limited to, equipment under extreme pressure or heat.

[75 FR 74831, Dec. 1, 2010, as amended at 77 FR 51490, Aug. 24, 2012]

Subpart M [Reserved]

Subpart N—Glass Production

§ 98.140 Definition of the source category.

(a) A glass manufacturing facility manufactures flat glass, container glass, pressed and blown glass, or wool fiberglass by melting a mixture of raw materials to produce molten glass and form the molten glass into sheets, containers, fibers, or other shapes. A glass manufacturing facility uses one or more continuous glass melting furnaces to produce glass.

(b) A glass melting furnace that is an experimental furnace or a research and development process unit is not subject to this subpart.

§ 98.141 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains a glass production process and the facility meets the requirements of either § 98.2(a)(1) or (2).

§ 98.142 GHGs to report.

You must report:

(a) CO_2 process emissions from each continuous glass melting furnace.

(b) CO_2 combustion emissions from each continuous glass melting furnace.

(c) CH_4 and N_2O combustion emissions from each continuous glass melting furnace. You must calculate and report these emissions under subpart C of this part (General Stationary Fuel Combustion Sources) by following the requirements of subpart C.

(d) CO_2, CH_4, and N_2O emissions from each stationary fuel combustion unit other than continuous glass melting furnaces. You must report these emissions under subpart C of this part (General Stationary Fuel Combustion Sources) by following the requirements of subpart C.

§ 98.143 Calculating GHG emissions.

You must calculate and report the annual process CO_2 emissions from each continuous glass melting furnace using the procedure in paragraphs (a) and (b) of this section.

(a) For each continuous glass melting furnace that meets the conditions specified in § 98.33(b)(4)(ii) or (iii), you must calculate and report under this subpart the combined process and combustion CO_2 emissions by operating and maintaining a CEMS to measure CO_2 emissions according to the Tier 4 Calculation Methodology specified in § 98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).

(b) For each continuous glass melting furnace that is not subject to the requirements in paragraph (a) of this section, calculate and report the process and combustion CO_2 emissions from the glass melting furnace by using either the procedure in paragraph (b)(1) of this section or the procedure in paragraphs (b)(2) through (b)(7) of this section, except as specified in paragraph (c) of this section.

(1) Calculate and report under this subpart the combined process and combustion CO_2 emissions by operating and maintaining a CEMS to measure CO_2 emissions according to the Tier 4 Calculation Methodology specified in § 98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).

(2) Calculate and report the process and combustion CO_2 emissions separately using the procedures specified in paragraphs (b)(2)(i) through (b)(2)(vi) of this section.

(i) For each carbonate-based raw material charged to the furnace, obtain from the supplier of the raw material the carbonate-based mineral mass fraction.

(ii) Determine the quantity of each carbonate-based raw material charged to the furnace.

(iii) Apply the appropriate emission factor for each carbonate-based raw material charged to the furnace, as shown in Table N–1 to this subpart.

(iv) Use Equation N–1 of this section to calculate process mass emissions of CO_2 for each furnace:

$$E_{CO2} = \sum_{i=1}^{n} MF_i \bullet \left(M_i \bullet \frac{2000}{2205} \right) \bullet EF_i \bullet F_i \qquad \text{(Eq. N-1)}$$

Where:

E_{CO2} = Process emissions of CO_2 from the furnace (metric tons).

n = Number of carbonate-based raw materials charged to furnace.

MF_i = Annual average mass fraction of carbonate-based mineral i in carbonate-based raw material i (percentage, expressed as a decimal).

M_i = Annual amount of carbonate-based raw material i charged to furnace (tons).

2000/2205 = Conversion factor to convert tons to metric tons.

EF_i = Emission factor for carbonate-based raw material i (metric ton CO_2 per metric ton carbonate-based raw material as shown in Table N–1 to this subpart).

F_i = Fraction of calcination achieved for carbonate-based raw material i, assumed to be equal to 1.0 (percentage, expressed as a decimal).

(v) You must calculate the total process CO_2 emissions from continuous glass melting furnaces at the facility using Equation N–2 of this section:

$$CO_2 = \sum_{i=1}^{k} E_{CO_2 i} \qquad \text{(Eq. N-2)}$$

Where:

CO_2 = Annual process CO_2 emissions from glass manufacturing facility (metric tons).

E_{CO2i} = Annual CO_2 emissions from glass melting furnace i (metric tons).

k = Number of continuous glass melting furnaces.

(vi) Calculate and report under subpart C of this part (General Stationary Fuel Combustion Sources) the combustion CO_2 emissions in the glass furnace according to the applicable requirements in subpart C.

(c) As an alternative to data provided by the raw material supplier, a value of 1.0 can be used for the mass fraction (MF_i) of carbonate-based mineral i in Equation N–1 of this section.

§ 98.144 Monitoring and QA/QC requirements.

(a) You must measure annual amounts of carbonate-based raw materials charged to each continuous glass melting furnace from monthly measurements using plant instruments used for accounting purposes, such as calibrated scales or weigh hoppers. Total annual mass charged to glass melting